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NOTES ON GEOGRAPHIC DISTRIBUTION

Plantae, Myrtales, Memecylaceae, *Memecylon macrocarpum* Thwaites (1864): Distribution extension and geographic distribution map

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ABSTRACT: The genus *Memecylon* L. has a paleotropical distribution, with about 300 species in the World, and about 30 in India. In this note we report the distribution extension of *Memecylon macrocarpum* Thwaites based on our diversity inventories in tropical evergreen forests at Uppangala in the Western Ghats, India. Additional distribution records of the species at Courtallum and Malayator were taken from the herbarium of the French Institute of Pondicherry (HIFP). This study highlights the importance of quantitative ecological inventories in determining species distributions and also confirms a greater range of occurrence of this species.

The genus *Memecylon* L. is distributed in tropical Africa, Asia, Australia, Madagascar and Pacific islands, and comprises about 300 species (Mabberley 1987). In India, the genus is represented by about 30 species (Clarke 1879; Santapau and Henry 1972), of which 15 are endemic to peninsular India (Manickam *et al.* 2001). Recently Murugan and Murthy (2010) reported *Memecylon macrocarpum* Thwaites as an additional species to the Indian flora based on the sole collection deposited in the Madras herbarium (MH) of the Botanical Survey of India by C.E. Ridsdale from Courtallum in Tirunelveli district of Tamil Nadu. Duplicate specimens from the same collection were also deposited in the herbarium of the French Institute of Pondicherry (HIFP). *M. macrocarpum* Thwaites was previously thought to be an endemic species of Sri Lanka (Thwaites 1859; Bremer 1987) and the species is listed as vulnerable [A1c, B1+2c] by the IUCN (2010) red list of species.

Nonetheless, in November 2010 we collected samples of *M. macrocarpum* Thwaites (Figure 1) while inventorying tree diversity in 1-ha plots established between 270 and 340 m above msl of the tropical evergreen forest at Uppangala, Coorg district of Karnataka, India. Specimen identification was confirmed by consulting the digital image of the type specimen housed at Royal Botanic Gardens, Kew (CP 2798) and also by the authenticated specimens housed in the herbarium of the French Institute of Pondicherry (HIFP). The voucher specimen (Ayyappan and Jeyakumar 315) is housed in HIFP. The Uppangala forest is located at 12°33' N, 75°39' E (Figure 2). It belongs to the *Dipterocarpus indicus-Kingiodendron pinnatum-Humboldtia brunonis* type of wet evergreen forests (Pascal 1986). The rainfall regime is characterized by a period of heavy rainfall alternating with a dry season. Uppangala receives slightly more than 5100 mm per year and the dry season lasts 4.5 months.

A scrutiny of earlier collections of this species at HIFP revealed that there were five specimens deposited in the herbarium. Three were collected from the Uppangala

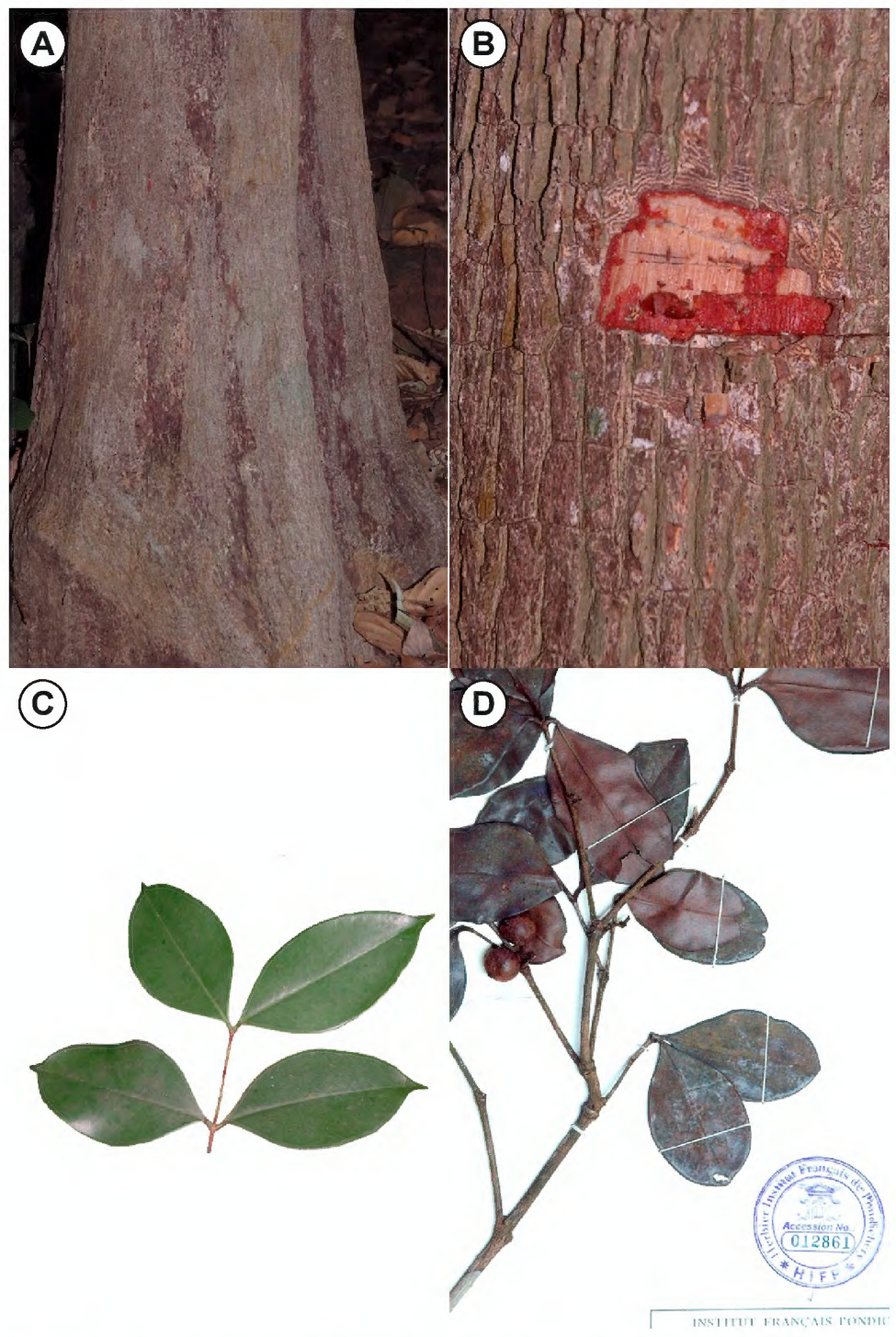

FIGURE 1. Specimen of *Memecylon macrocarpum* Thwaites collected in the tropical evergreen forest at Kadamakal reserve forest, Coorg district of Karnataka state, India. A - Trunk; B – Bark; C – Branch detail; D – Fruit detail from the herbarium specimen.

forest at altitudes between 400 and 600 m above msl (B.R. Ramesh 1025, B.R. Ramesh 67 and S. Aravajy 52). One specimen was collected from a plantation above the village of Courtallam, Tirunelveli district of Tamil Nadu (C.E. Ridsdale 51) at 800 m above msl. The specimen collection site receives rainfall ranging between 1200 and 1500 mm per year and a dry season that lasts 4.5 months (Pascal 1982). The associated species in the Courtallam site based on the collection of Ridsdale deposited in HIFP includes *Antidesma alexiteria* L. (Euphorbiaceae), *Canarium strictum* Roxb. (Burseraceae), *Canthium dicoccum* (Gaertn.) Teys. and Binn. var. *lanceolata* Arn. (Rubiaceae), *Chukrasia tabularis* A. Juss. (Meliaceae), *Elaeocarpus tuberculatus* Roxb. (Elaeocarpaceae), *Fagraea ceylanica* Thunb. (Loganiaceae), *Ficus exasperata* Vahl. (Moraceae), *Garcinia gummi-gutta* (L.) Robs. (Clusiaceae), *Gordonia obtusa* Wall. ex Wt. and Arn. (Theaceae), *Isonandra lanceolata* Wt. (Sapotaceae), *Schefflera wallichiana* (Wt. and Arn.) Harms (Araliaceae), *Sterculia guttata* Roxb. (Sterculiaceae), *Syzygium mundagam* (Bourd.) Chitra (Myrtaceae) and *Xanthophyllum arnottianum* Wt. (Xanthophyllaceae). The fifth specimen was collected from a highly disturbed secondary evergreen forest at 70 m above msl in Malayator, Ernakulam district of Kerala (Ramesh and Karunakaran 13). This locality belongs to the *Dipterocarpus indicus-Dipterocarpus bourdilloni-Strombosia ceylanica* floristic type and receives rainfall of about 3500 mm per year and the dry season lasts 3 to 4 months (Ramesh and Gurkul 2007).

A species distribution map (Figure 2) was generated by incorporating all these records using ARC-GIS 9.3. The geographic coordinates of the present collection were taken in the field and the additional ones were taken from the HIFP herbarium database. The new locality records for the species in the Western Ghats highlights the importance of floristic studies in determining species distributions. The record of its presence in the Western Ghats confirms a greater range of occurrence of this species.

Memecylon macrocarpum Thwaites, Enum. Pl. Zeyl. 110, 1859; Trimen, Handb. Fl. Ceylon 2: 220, 1894; Bremer in Dassanayake and Fosberg, Rev. Handb. Fl. Ceylon 6: 236, 1987; Murugan and Murthy, JETB 34: 522. 2010.

Trees to 18 m tall. Branchlets subterete, glabrous. Leaves simple, opposite, decussate, petiole 0.5-0.7 cm, planoconvex in cross section, glabrous, lamina 9 x 6 cm, broadly elliptic, apex acute to acuminate or obtuse, base acute to attenuate, margin entire, shining above, coriaceous, glabrous, midrib flat above, secondary nerves and intramarginal nerves obscurely visible when dry, tertiary nerves not visible. Inflorescence condensed or umbel shaped cymes, peduncle 0.4 cm long, axillary. Flowers distinctly pedicellate, purple, calyx deeply furrowed with radiating wing inside. Berry, 1.5-2 cm across, globose with remnants of persistent calyx, seed 1.

Geographic Distribution: INDIA AND SRI LANKA; INDIA: Karnataka state: Kadamakal Reserve Forest and Pushpagiri Wildlife sanctuary; Kerala state: Aluva, Kalady Range, Malayator; Tamil Nadu state: Courtallum, Tirunelveli.

Material examined: INDIA. Karnataka state: Pushpagiri Wildlife sanctuary, 16-XI-2010, N. Ayyappan and S. Jeyakumar AJ 315 (HIFP); Kadamakal Reserve Forest, 26-XI-1984, B.R. Ramesh, BRR 1025 (HIFP), Pushpagiri Wildlife sanctuary 7-III-1982, B.R. Ramesh, BRR 67 (HIFP); Uppangala permanent sampling plot, 29-V-1993, S. Aravajy SA 052 (HIFP); Kerala state: Aluva, Kalady Range, Malayator, 11-IV-2004, B.R. Ramesh and P.V. Karunakaran BRR and PVK 13 (HIFP); Tamil Nadu state: Plantation above village, Courtallum, Tirunelveli 6-VI-1976, C. E. Ridsdale, CER 51 (HIFP).

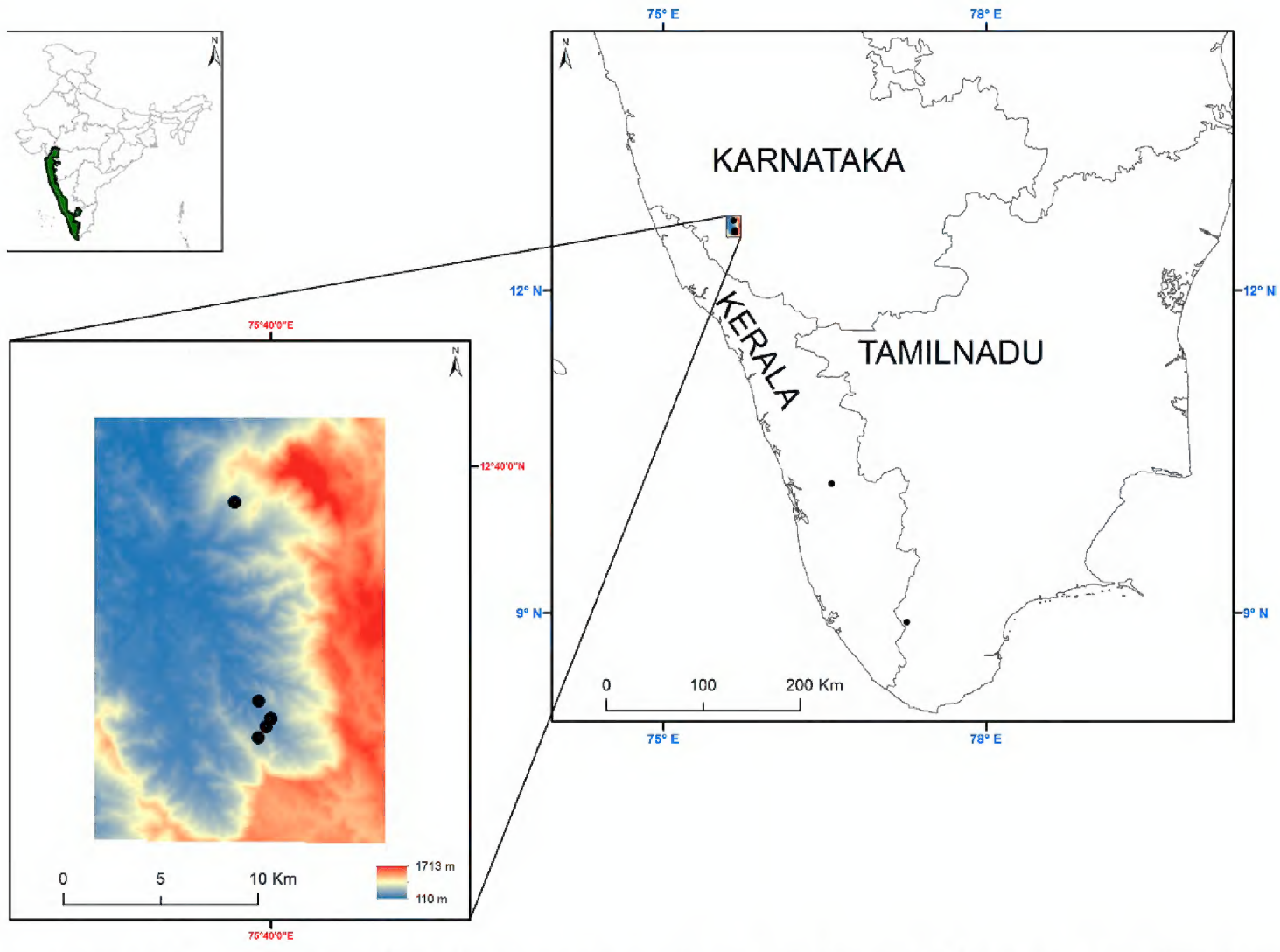

Figure 2. Distribution of *Memecylon macrocarpum* Thwaites; dots refer to collection localition: 1. Courtallum, Tirunelveli district of Tamil Nadu state; 2. Aluva, Kalady Range, Malayator division, Ernakulam district of Kerala state; 3. Kadamakal reserve forest and Pushpagiri Wildlife sanctuary, Coorg district of Karnataka state.

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